AMENDMENTS TO THE CLAIMS

1. (Original) A heat exchanger comprising:

a header defining a fluid chamber for collecting a fluid; and

at least one heat exchange tube defining a plurality of discrete fluid flow paths therethrough and having an inlet opening to said plurality of fluid flow paths; and

a connector having an inlet end and an outlet end and defining an inlet chamber at said inlet end in fluid flow communication with the fluid chamber of said header, an outlet chamber at said outlet end in fluid communication with the inlet opening of said at least one heat exchange tube, and an intermediate chamber defining a flow path between said inlet chamber and said outlet chamber, said flow path having a plurality of flow restriction ports disposed therein in a spaced series arrangement.

2. (Original) A heat exchanger as recited in claim 1 wherein each flow restriction port of said plurality of flow restriction ports comprises an expansion orifice.

3. (Original) A heat exchanger as recited in claim 2 wherein each flow restriction port of said plurality of flow restriction ports comprises a straight walled, cylindrical opening.

4. (Original) A heat exchanger as recited in claim 2 wherein each flow restriction port of said plurality of flow restriction ports comprises a contoured opening.

5. (Currently Amended) A heat exchanger as recited in claim ~~5~~ 1 wherein said at least one heat exchange tube has a flattened, rectangular cross-section.

6. (Original) A heat exchanger as recited in claim 1 wherein each of said plurality of channels defines a flow path having a non-circular cross-section.

7. (Original) A heat exchanger as recited in claim 6 wherein each of said plurality of channels defines a flow path is selected from a group of a rectangular, triangular or trapezoidal cross-section.

8. (Original) A heat exchanger as recited in claim 1 wherein each of said plurality of channels defines a flow path having a circular cross-section.

9. (Original) A refrigerant vapor compression system comprising:

a compressor, a condenser and an evaporative heat exchanger connected in fluid flow communication in a refrigerant circuit whereby high pressure refrigerant vapor passes from said compressor to said condenser, high pressure refrigerant passes from said condenser to said evaporative heat exchanger, and low pressure refrigerant vapor passes from said evaporative heat exchanger to said compressor; characterized in that said evaporative heat exchanger includes:

an inlet header and an outlet header, each in fluid flow communication with the refrigerant circuit, said inlet header defining a chamber for receiving refrigerant from the refrigerant circuit;

at least one heat exchange tube having an inlet opening and an outlet opening and having a plurality of discrete fluid flow paths extending from the inlet opening to the outlet opening, the outlet opening in fluid flow communication with said outlet header; and

a connector having an inlet end and an outlet end and defining an inlet chamber at said inlet end in fluid flow communication with the fluid chamber of said header, an outlet chamber at said outlet end in fluid communication with the inlet opening of said at least one heat exchange tube, and an intermediate chamber defining a flow path between said inlet chamber and said outlet chamber, said flow path having a plurality of flow restriction ports disposed therein in a spaced series arrangement.

10. (Original) A heat exchanger as recited in claim 9 wherein each flow restriction port of said plurality of flow restriction ports comprises an expansion orifice.

11. (Original) A heat exchanger as recited in claim 10 wherein each flow restriction port of said plurality of flow restriction ports comprises a straight walled, cylindrical opening.

12. (Original) A heat exchanger as recited in claim 10 wherein each flow restriction port of said plurality of flow restriction ports comprises a contoured opening.

13. (Original) A refrigerant vapor compression system as recited in claim 9 wherein said at least one heat exchange tube has a flattened, rectangular cross-section.

14. (Original) A refrigerant vapor compression system as recited in claim 9 wherein said heat exchanger comprises a single-pass heat exchanger.

15. (Original) A refrigerant vapor compression system as recited in claim 9 wherein said heat exchanger comprises a multi-pass heat exchanger.

16. (Original) A refrigerant vapor compression system as recited in claim 9 wherein said heat exchanger comprises a condenser.

17. (Original) A refrigerant vapor compression system as recited in claim 9 wherein said heat exchanger comprises an evaporator.

18. (Original) A refrigerant vapor compression system comprising:

a compressor, a first heat exchanger and a second heat exchanger connected in fluid flow communication in a refrigerant circuit whereby a refrigerant circulates in a first direction in a cooling mode from said compressor through said first heat exchanger, thence through said second high exchanger and back to said compressor, and circulates in a second direction in a heating mode from said compressor through said second heat exchanger, thence through said first heat exchanger and back to said compressor; characterized in that said second heat exchanger includes:

a first header and a second header, each in fluid flow communication with the refrigerant circuit, said first header defining a fluid chamber for receiving refrigerant from the refrigerant circuit flowing in the first direction and said second header defining a

chamber for receiving refrigerant from the refrigerant circuit flowing in a second direction;

at least one heat exchange tube having a first end and a second end and a plurality of discrete fluid flow paths extending between the first end and the second end, the plurality of discrete fluid flow paths in fluid flow communication between the fluid chamber of said first header and the fluid chamber of said second header;

a connector having an inlet end and an outlet end and defining an inlet chamber at said inlet end in fluid flow communication with the fluid chamber of said first header, an outlet chamber at said outlet end in fluid communication with the plurality of discrete fluid flow paths of said at least one heat exchange tube, and an intermediate chamber defining a flow path between said inlet chamber and said outlet chamber, said flow path having a plurality of flow restriction ports disposed therein in a spaced series arrangement and adapted to create a relatively large pressure drop in refrigerant flow passing in the first direction and a relatively small pressure drop in refrigerant flow passing in the second direction.

19. (Original) A refrigerant vapor compression system comprising:

a compressor, a first heat exchanger and a second heat exchanger connected in fluid flow communication in a refrigerant circuit whereby a refrigerant circulates in a first direction in a cooling mode from said compressor through said first heat exchanger, thence through said second high exchanger and back to said compressor, and circulates in a second direction in a heating mode from said compressor through said second heat exchanger, thence through said first heat exchanger and back to said compressor; characterized in that said first heat exchanger includes:

a first header and a second header, each in fluid flow communication with the refrigerant circuit, said first header defining a fluid chamber for receiving refrigerant from the refrigerant circuit flowing in the first direction and said second header defining a chamber for receiving refrigerant from the refrigerant circuit flowing in a second direction;

at least one heat exchange tube having a first end and a second end and a plurality of discrete fluid flow paths extending between the first end and the second end,

the plurality of discrete fluid flow paths in fluid flow communication between the fluid chamber of said first header and the fluid chamber of said second header;

a connector having an inlet end and an outlet end and defining an inlet chamber at said inlet end in fluid flow communication with the fluid chamber of said second header, an outlet chamber at said outlet end in fluid communication with the plurality of discrete fluid flow paths of said at least one heat exchange tube, and an intermediate chamber defining a flow path between said inlet chamber and said outlet chamber, said flow path having a plurality of flow restriction ports disposed therein in a spaced series arrangement and adapted to create a relatively small pressure drop in refrigerant flow passing in the first direction and a relatively large pressure drop in refrigerant flow passing in the second direction.